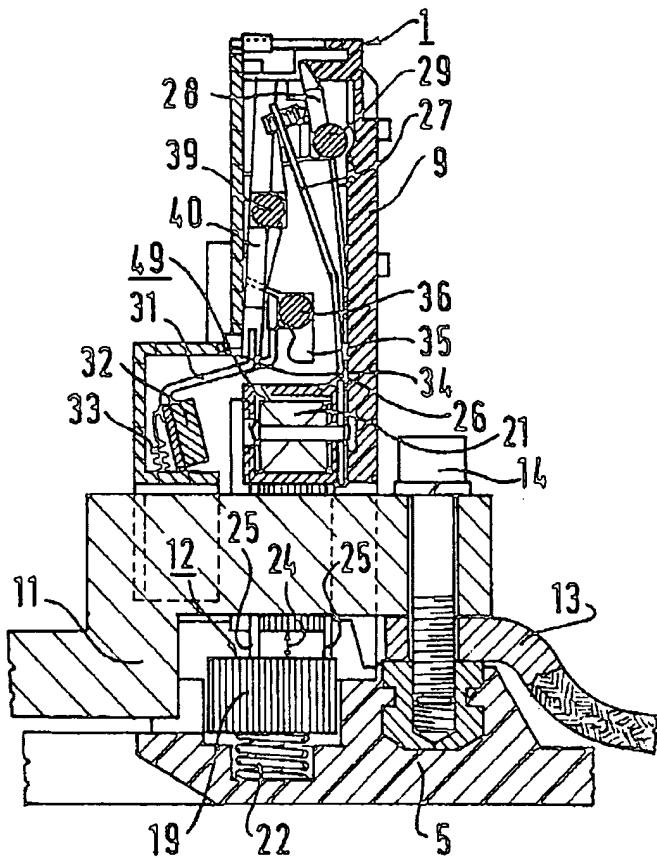


FIG.4



(4) A spring 22 disposed in a recess 23 of the stand 5 and lying between said stand 5 and said floating part 19 holds this floating part pressed against the part 49.

(5) In FIG. 4, the air gap 24 which exists between the two separable parts 19 and 49 of the magnetic circuit 12 is determined by two non-magnetic metal sheets 25 situated on either side of the laminations 21 of the said other part 49 and on which the said one magnetic part 19 abuts due to the effect of the spring 22. The central portion of the U-shaped laminations 21 (FIG. 7) is surrounded by a conductive ring 26 forming a short-circuit turn for the secondary winding of the transformer, for which the conductor 11 forms the primary winding, while the other end of a thermal switch 27 in thermal contact with said ring 26 operates an arm 28 on an auxiliary thermal release shaft 29 to which it transmits its thermo-mechanical movement

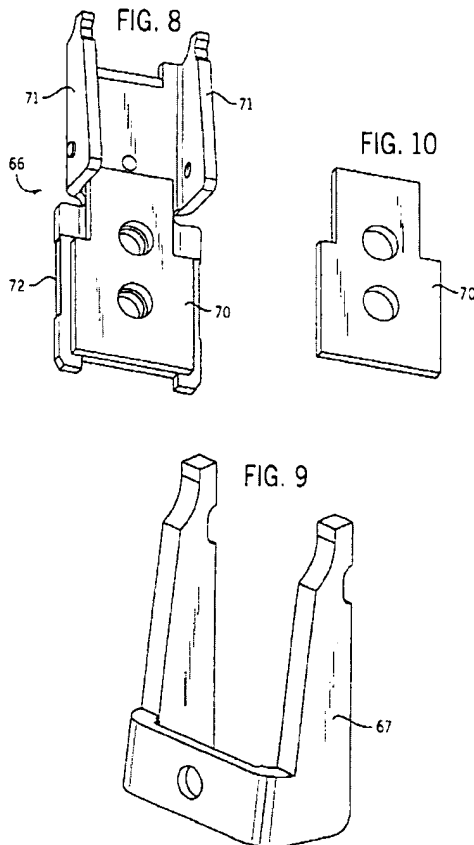
(6) In FIG. 5, the electromagnetic short-circuit detector includes a pair of soft steel plates 30 forming a separable part of a magnetic circuit fixed to the laminations 21 and the non-magnetic metal sheets 25 on the insulating casing 9 of the tripping device 1. The short-circuit detector also includes a magnetic armature 32 fixed to a mobile plate 31 fitted with return springs 33.

(7) When there is a short-circuit, the current passing through the conductor 11 energizes the magnetic circuit which includes the soft steel plates 30 and which is completed across the spring-loaded portion 19 of the magnetic circuit 12 which surrounds said conductor 11. The soft iron plates 30 then attract the armature 32 fixed on the mobile plate 31 which has an end 34 that operates an electromagnetic tripping arm 35 (FIG. 4). The short-circuit current is adjusted to cause tripping by means of a knob 37 which operates an adjusting arm 38 which rotates an adjusting bar 39 which has another arm 40 (FIG. 4) that varies the distance between the armature 32 and the soft steel plates 30.

(8) In FIG. 6, the means for accurate positioning of the hook 6 of said tripping device with respect to the control mechanism of the circuit-breaker 2 is shown. FIG. 6 also shows the fixing, by means of the screws 7 with the interposed springs 8 (compatible with the wide manufacturing tolerances for the casing 9) said tripping device 1 to the stand 5 of the circuit-breaker 2. The resilient bias of the springs 8 determines the application force of the

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Find what: 31		End Next		Title	
Area	Direction	Match word	Look in	magnetic overcurrent tripping	
<input type="radio"/> All	<input type="radio"/> Up	<input type="radio"/> Whole	<input type="radio"/> Grid	an electromagnetic tripping	
<input type="radio"/> Sel/Cu	<input type="radio"/> Down	<input type="radio"/> Part	<input type="radio"/> Documents	maker having a cam for exte	
				trip adjustment based on s	
				for variably adjusting a me	
51	<input type="checkbox"/> 335/42	335/176	8	US 4130314 Interchangeable tripping device for a	
52	<input type="checkbox"/> 335/42	335/176	33	US 4114123 Circuit breaker	
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magnetic forces acting on the conductors in the circuit breaker. Because the short circuit let-through current is higher for the higher current rated breakers, such breakers experience higher magnetic forces on the conductors than do the lower rated breakers. The short circuit current magnetic forces can have an adverse effect on the subsequent performance of the circuit breaker. In a higher current rated breaker, for example 100 amps. or higher, the short circuit forces may be high enough to cause permanent deformation of the bi-metal/load terminal assembly in the trip mechanism. This deformation may change the thermal calibration characteristics of the breaker, or may interfere with resetting of the mechanism latch. On a lower current rated breaker, for example 40 amps. or below, the short circuit let-through currents and magnetic forces are lower. In such cases, deformation of the trip mechanism typically does not occur.

(19) In the present bi-metal trip mechanism 60 the assembly of the load bus 61 and bi-metal element 62, as shown in FIG. 5 can be used for a low current ratings, i.e., below 40 amps. The magnetic shield 72 is integral with the outer magnetic yoke 66 and is interposed between the load bus 61 and the bi-metal element 62. The two facilitate the necessary magnetic force to trip the breaker in the event of a short circuit condition, with an additional inner magnetic yoke 67 added to the assembly as shown in FIG. 6. However, on the higher current rated breakers, i.e., 100 amps. or above, the outer magnetic yoke 66 with the integral magnetic shield 72 may not provide enough shielding to prevent the bi-metal/load terminal assembly from deforming. To provide additional magnetic shielding, a second magnetic shield 70 as shown in FIGS. 8 and 10 can be added to the outer yoke 66.

(20) FIG. 2 illustrates the bi-metal trip assembly 60 with the additional magnetic shield 70 installed and held in place by the rivets 69. The additional magnetic shield 70 may also be attached to the outer magnetic yoke by welding or other suitable attachment means. This method of providing additional magnetic shielding avoids the requirement of having two separate outer magnetic yokes for the various current ratings of the circuit breakers. A single outer magnetic yoke 66 can be used in a broad range of current ratings by adding such parts as the inner yoke 67 to amplify magnetic forces as necessary or to add the second magnetic shield 70 to protect from bi-metal deformation during high current conditions in the higher current rated circuit breaker.

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Area: All Direction: Up Match word: Whole Look in: Grid

Search: SelCur Down Part Right Documents Match case

13 335/176 335/42 7 US 6396373 Adjustable armature assembly for a

14 335/65 335/172 12 US 6396370 Bi-metal trip unit for a molded case

Details Text Image HTML

United States Patent [17]

Leiber

[51] Patent Number 4,711,266

[45] Date of Patent Dec. 8, 1987

[54] VALVE ARRANGEMENT

[71] Inventor: Helmut Leiber, Oberkochen, Fed. Rep. of Germany

[73] Assignee: Robert Bosch GmbH, Stuttgart, Fed. Rep. of Germany

[21] Appl. No.: 618,615

[22] Filed: Sep. 3, 1982

[30] Foreign Application Priority Data

Apr. 7, 1981 [DE] Fed. Rep. of Germany 221,000

[31] Int. Cl. ¹ F16K 31/00; F16K 31/02

[32] U.S. Cl. 137/625.26; 251/129.18; 251/110

[58] Field of Search 137/625, 625.65, 625.76; 251/129.18, 251.210

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Primary Examiner—Alan Cohen

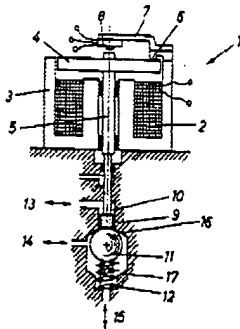
Assistant Examiner—John R. Vell

Attorney Agent or Firm—Edwin E. Greig

[57] ABSTRACT

A valve arrangement which assumes at least two positions and a monitoring system which is to monitor the functional performance of the valve arrangement. A valve closing body is connected to a slider which slides in sealing fashion in the opening to be closed by the valve closing body so that the opening is not set free until after lifting of the valve closing body and the slider set free the opening.

6 Claims, 3 Drawing Figures



US-PAT-NO: 4711266

DOCUMENT-IDENTIFIER: US 4711266 A

TITLE: Valve arrangement

	U	Current	Current X	Pa	Document I	Title
126	<input type="checkbox"/>	166/66.7	251/129.1	22	US 4796708	Electrically actuated safety valve for
128	<input type="checkbox"/>	137/595	251/129.1	21	US 4787414	Fuel control valve construction, parts
127	<input type="checkbox"/>	347/54	251/129.1	6	US 4737802	Fluid jet printing device
128	<input type="checkbox"/>	251/129	239/585.2	20	US 4725041	Fuel injection apparatus and system
129	<input type="checkbox"/>	188/282	137/614.2	8	US 4723640	Adjustable hydraulic vibration damper
130	<input checked="" type="checkbox"/>	137/554	137/625.2	4	US 4711266	Valve arrangement
131	<input type="checkbox"/>	239/125	239/451	4	US 4708289	Injection valve

512
527

Species 1 - directed
adjustment using
adjustment number to
adjust path lengths
2 - material